Innovative and Sustainable Technologies to Address the Global Arsenic Crisis

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As scientists, engineers, manufacturers, government officials and municipal and private water providers commit themselves to meeting the new Environmental Protection Agency arsenic standard of 10 µg/liter by January 2006 though the best commercially available technologies, we must also consider the impact of arsenic-contaminated drinking water on millions of people globally. Many of the people most seriously affected by arsenic in drinking water are living in rural areas of developing countries. This talk will give an update on the global extent of arsenic in drinking water, on some of the leading innovative and sustainable technologies to remove arsenic from drinking water, on some of the initiatives to implement these technologies in South and South East Asia and on the latest research findings related to the Kanchan™ Arsenic Filter, which, at $20 per system, has been specifically designed to meet the needs of the "dollar a day" people.

Susan Murcott, Principal Investigator and Research Engineer, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology. Her work focuses on innovative and low-cost water and wastewater treatment technologies for developing countries. She has been a pioneer in the emerging field of household drinking water treatment and safe storage (HWTS) to reach the billion + people in the world that lack access to safe drinking water and the 2.4 billion who lack access to adequate sanitation. She has established a program "Clean Water for 1 Billion People (H_2O-1B!)"in the MIT Department of Civil and Environmental Engineering and worked collaboratively with other departments and universities (Tufts, Harvard, UC-Berkeley, Lulea University of Technology, Sweden), leading multidisciplinary teams including students from the Sloan Business School, Urban Studies and Policy, Mechanical Engineering, Harvard School of Public Health. Her teams have conducted field work in Nepal, Brazil, Haiti, Dominican Republic, Nicaragua, Peru, Kenya and Ghana addressing a wide range of safe water and sanitation issues, including microbiologically and/or chemically (arsenic, fluoride) contaminated drinking water supplies, ecological sanitation and wastewater treatment. Scale-up is taking place both through the application of household drinking water treatment innovations in the specific research field sites and also through Murcott's work with the World Health Organization "International Network to Promote Household Drinking Water Treatment and Safe Storage" where she co-chairs the Implementation Working Group <http://www.who.int/household_water>. Murcott is a leading voice for sustainability, both at MIT and beyond. She co-teaches two courses at Cambridge University: "Sustainable Development for Large Infrastructure Projects" with Peter Guthrie (Cambridge University) and Carl Martland (MIT) and "Design for Developing Countries," with MacArthur fellow Amy Smith (MIT). These courses are among the offerings in the new Engineering for Sustainable Development program leading to a Masters degree (M.Phil.). Murcott is the author of over 50 professional papers. See: Murcott's faculty Web Page <http://cee.mit.edu/index.pl?id=2700 and http://web.mit.edu/watsan>.

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